Sub D1

(2) means mounted to said vehicle for indicating the dumping of the load carried by said body;

(3) means mounted to said vehicle for indicating the direction of movement by said vehicle;

a first processor means on-board said vehicle for acquiring data generated from means (1), (2) and (3) and organizing said acquired data for downloading to a remote control center; and

(4) means for sending said acquired data to said remote control center and for receiving control signals therefrom.

Sub D2

2. (Twice Amended) An apparatus as set forth in claim 105 wherein said first processor means includes (1) memory means for storing data indicative of a predetermined maximum weight capacity for said dump body, (2) detection means responsive to incremental increases in the total weight of said dump body for determining the approximate weight of material added by a bucket of a loader, (3) comparison means responsive to said memory, first processor and detection means for determining if the total weight minus said predetermined maximum weight for said dump body is a fraction of the approximate weight of material in said bucket, and (4) display means responsive to said comparison means for displaying the remaining weight capacity of said dump body.

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4. (Once Amended) An apparatus as set forth in claim 2 wherein said processor means includes means for isolating pressure data representing pressure spikes and means for recording the occurrence of a pressure spike, and means responsive to the recording means for delivering data to said display means indicative of the condition [degree] of a road [roughness] over which said vehicle travels.

11. (Twice Amended) An apparatus as set forth in claim 105 including:

first transceiver means mounted to [each of] said [plurality of] vehicle[s];

said first processor means mounted to said vehicle and said first processor means operatively coupled to said first transceiver means and said pressure sensor assembly for receiving said data from said pressure sensor assembly, processing said data and transmitting data signals indicative of the vehicle's hauling status by way of said transceiver; and

said control center including a [stationary] second processor means having a second transceiver means for communicating with said first transceiver means, said [stationary] second processor means receiving said data signals from said processor means, said data signals identifying the vehicle and its hauling status.

12. (Twice Amended) An apparatus as set forth in claim 11 wherein

said [stationary] second processor means includes (1) first means for calculating in response to said data signals an average load time for each loader, (2) second means responsive to said data and said first means for calculating the current load delay time for each loader, (3) third means for identifying the loader with the minimum load delay, (4) fourth means for forming data for transmission by said second transceiver means, said data identifying a particular vehicle and the loader with the minimum load delay time; and

said first processor means [mounted to said vehicle] including fifth means responsive to data received from said fourth means by said first transceiver for displaying the number of the loader identified by the data to the operator of the vehicle identified by the data.

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14. (Twice Amended) An apparatus as set forth in claim 11 wherein said [stationary] second processor means includes memory means for archiving data from said vehicle.

15. (Twice Amended) An apparatus as set forth in claim 11 wherein said first processor means generates data signals for transmission in response to said data from said pressure sensor assembly which are indicative of whether said vehicle is dumping its load, beginning loading of a new load or in transit between load and dump sites.

16. (Twice Amended) An apparatus as set forth in claim 15 wherein said first processor means generates data signals for transmission in response to data from a plurality of sensors on-board said vehicle[s] including gear sensors, dump sensors and distance sensors.

17. (Twice Amended) An apparatus as set forth in claim 11 wherein said [stationary] second processor means includes memory means for archiving said data signals [from each of said plurality of processors] in response to vehicle identification and vehicle type data included in said data signals [groups firstly identifiable with individual trucks and secondly identifiable with types of vehicles].

18. (Twice Amended) An apparatus as set forth in claim 17 wherein the data base formed by the data archived in said memory means is used by said [stationary] second processor means to generate data for controlling the movement of said vehicle by transmitting said control data for reception by said first transceiver.

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19. (Twice Amended) An apparatus as set forth in claim 105 wherein said first processor means includes:

means for periodically sampling the pressure data from said pressure sensor assembly;

storing said data;

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means for periodically comparing a selected one of said data samples with other stored samples to determine if said one of said data samples is a pressure spike;

means for counting the pressure spikes; and

means for deriving from the total count of pressure spikes an indication of the conditional [degree] of a road [roughness] over which said vehicle travels and displaying said indication on display means.

D5

20. (Twice Amended) An apparatus as set forth in claim 105 including:

said first processor means providing an indication of a load or dump condition of said vehicle in response to pressure data from said pressure sensor assembly;

distance means for measuring the distance traveled by said vehicle between load and dump indications from said first processor means;

storage means responsive to said distance means and said pressure sensor assembly for storing the distance traveled by said vehicle between load and dump sites and for storing the total weight of the load hauled by said vehicle between sites; and

means responsive to the storage means for multiplying the distance traveled by the weight hauled in order to provide a tons-miles record.

21. (Once Amended) An apparatus as set forth in claim 20 including, means for transmitting to said [a] remote [location] control center the [value] tons-miles record resulting from [the] said multiplying means where said tons-miles record [the value] is divided by the time interval between successive load and dump indications, thereby providing a measure of the wear experienced by the tires of said vehicle [standard for the degree of tire load].

22. (Twice Amended) An apparatus according to claim 105 including [wherein said apparatus identifies a reference number and records vital statistics of the vehicle in connection with said reference number, said apparatus includes]:

memory means operatively coupled to said first processor means;

means coupled to said first processor means for entering an identifier [said reference number] and for [identifying] associating a portion of said memory means with said identifier [corresponding to said reference number];

said first processor means responsive to said pressure data for 1) providing data indicative of vehicle

performance [manipulating said data] and 2) routing said [manipulated] vehicle performance data to locations within said portion of said memory associated with said identifier [identified by said entering means];

detecting means responsive to said entering means for detecting changes in said identifier [the reference number]; and

display means responsive to said detecting means for displaying [the manipulated] said vehicle performance data in said portion of memory when a change of said identifier [reference number] has occurred.

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23. (Twice Amended) An apparatus according to claim 11 including:

said [stationary] second processor means including memory means for storing a predetermined maximum load capacity for each of said dump bodies; and

said first processor means including means for determining a weight of said dump body from the data of said pressure sensor assembly indicative of the weight of the load, each of said first processor means transmitting data to said second [stationary] processor means which is indicative of the total weight of the dump body,

said [stationary] second processor means 1) comparing the weight with the predetermined maximum load capacity, and 2) generating an output signal identifying the vehicle if the weight is greater than the predetermined maximum load capacity.

24. (Twice Amended) An apparatus as set forth in claim 105 including means for displaying the weight of said dump body in response to said first processor means.

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25. (Twice Amended) An apparatus as set forth in claim 23 including means in said [stationary] second processor means for accumulating the total number of times an output signal is generated indicating an overload of the vehicle.

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26. (Twice Amended) An apparatus as set forth in claim 105 including means for measuring the front and rear axle load of said vehicle wherein said dump body is pivotally mounted to said frame, said means comprising:

(5) means [a weighing device on said vehicle distinct from said pressure sensor assembly] for measuring a force of said dump body on said frame and providing data indicative of said force;

[a] said first processor means responsive to the data from said means (5) [weighing device] and said pressure sensor assembly for determining the distribution of the weight of said dump body over the front and rear axles of said vehicle; and

display means responsive to said first processor means for displaying the portions of the weight of said dump body carried by said front and rear axles.

27. (Twice Amended) An apparatus as set forth in claim 26 wherein hydraulic cylinders connected between said frame and dump body move said dump body between said raised and lowered positions, said [weighing device] means (5) sensing the pressure in the hydraulic fluid of said hydraulic cylinders.

28. (Twice Amended) An apparatus as set forth in claim 26 wherein said first processor means includes means for finding ~~the~~ a relative location of ~~the~~ center of gravity of a loaded dump body between said front and rear axles.

29. (Once Amended) An apparatus as set forth in claim 26 wherein said first processor means includes memory means storing predetermined tare weights for said front and rear axles and said first processor means including summing means for adding the [axle] weight on each of said front and rear axles to the tare weights of said front and rear axles in order to find a gross weight for each of said front and rear axles.

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30. (Twice Amended) An apparatus as set forth in claim 105, wherein said dump body is pivotal between raised and lowered positions on said dump body and where said pressure sensor assembly mounted on said frame includes a plurality of sensor elements and said sensor assembly provides an interface between said frame and dump body when said dump body is in a lowered position such that said plurality of sensor elements taken as a whole provide an indication of the total weight of said dump body and when taken in groups comprising less than the whole and thereby provide an indication of fore-and-aft weight distribution as well as side-to-side weight distribution of the load carried by the dump body; and

said first processor means having means responsive to said groups of sensor elements of said pressure sensor assembly for detecting an imbalance of the weight carried by said dump body and signaling the vehicle operator in response thereto.

31. (Twice Amended) An apparatus as set forth in claim 105 wherein said body is pivotally mounted to said truck frame and said apparatus includes a distance sensor for providing signals to said first processor means indicative of truck movement, said first processor means including means responsive to said distance sensor and to said pressure sensor assembly for providing an output signal when said vehicle moves without the dump body in its fully lowered position.

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32. (Twice Amended) An apparatus as set forth in claim 105 wherein said dump body is [pivotally] pivotable between raised and lowered positions and wherein said first processor means includes (1) memory means for storing the tare weight of said dump body, (2) means responsive to the lowering of said dump body onto said pressure sensor assembly after the load carried by said dump body has been dumped for comparing the weight of said dump body with the tare weight in said memory, and (3) means for indicating the dump body is not fully empty when the weight of the dump body is greater than the tare weight of the dump body plus a predetermined constant.

Sub Db

33. (Once Amended) An apparatus for processing data derived from the weight of the load carried by the body of a truck, said apparatus comprising:

a truck frame including a hinge assembly for pivotally supporting said truck body between raised and lowered positions;

a pressure sensor assembly mounted to said frame for supporting the entire weight of said body in its lowered position and providing pressure data representative of the weight of said truck body;

a distance sensor for providing distance data to said processor means indicative of truck movement;

a processor means for receiving said pressure data and detecting a [monotohic] change in the weight of said truck body and formulating data indicative of truck condition in response to said pressure data and its [monotohic] change; and

said pressure means including first means responsive to said pressure data for detecting said truck body raised off said pressure sensor assembly and second means responsive to said first means [(1)] and said distance data for providing an output signal when said truck moves with said body raised off said pressure sensor assembly.

C5

34. (Once Amended) An apparatus for processing data derived from the weight of the load carried by the body of a truck, said apparatus comprising:

a truck frame including a hinge assembly for pivotally supporting said truck body between raised and lowered positions;

a pressure sensor assembly mounted to said frame for supporting the entire weight of said body in its lowered position and providing pressure data representative of the weight of said truck body;

a processor means for receiving said pressure data and detecting a [monotohic] change in the weight of said truck body and formulating data indicative of such condition in response to said pressure data and its [monotohic] change; and

said processor means including (1) memory means for storing a predetermined [the] tare weight of said truck body, (2) means responsive to the lowering of said truck body onto said pressure sensor assembly after the load

carried by said body has been dumped for comparing the weight of said truck body with [the] said tare weight in said memory, and (3) means for indicating the body is not fully empty when the weight of the body is greater than [the] said tare weight of the body plus a predetermined constant.

35. (Once Amended) An apparatus for determining the remaining weight capacity of a body carried on a truck frame which is loaded by the bucket of a loader and for indicating when the weight of the material in a full average bucket is more than the remaining weight capacity of the body, said apparatus comprising in combination:

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a truck frame including a hinge assembly;

a truck body pivotally mounted to said truck frame at said hinge assembly, said truck body being pivotally movable on said frame between lowered and raised positions;

a pressure sensor assembly mounted to said frame for supporting the entire weight of said body in its lowered position and providing pressure data representative of the weight of said truck body;

a processor means for receiving said pressure data and determining [the total] said entire weight of said truck body, said processor means including;

(1) memory means for storing data indicative of a predetermined maximum weight capacity for said truck body, (2) detection means responsive to incremental increases in the total weight of said truck body for determining the approximate weight of material added by a bucket, (3) comparison means responsive to said [memory, processor and detection means for determining if the total] entire weight, [minus] said predetermined maximum weight capacity [for said truck body is a fraction of the] and said approximate weight

of material for determining the remaining weight capacity of said truck body [in said bucket], and (4) display means responsive to said comparison means for displaying [the] said remaining weight capacity of said truck body.

36. (Once Amended) An apparatus as set forth in claim 35 wherein said detection means includes;

first means for detecting an [a monotonic] increase in the total weight of said truck body; and

second means for storing said increase.

37. (Once Amended) An apparatus as set forth in claim 35 wherein said processor means includes means for isolating pressure data representing pressure spikes and means for recording the occurrence of a pressure spike, and means responsive to the recording means for delivering data to said display means indicative of the condition [degree] of a road [roughness] over which said vehicle travels.

44. (Once Amended) A system for minimizing the hauling time of a plurality of trucks between load and dump sites, said system comprising:

[an] a plurality of on-board weighing devices [on] each mounted on one of said plurality of trucks [said on-board weighing device] for providing signals indicative of a truck's operation [body weight];

[first transceiver means mounted to each of said plurality of trucks;]

a plurality of processor means each mounted to [each] one of said plurality of trucks and each processor means responsive to [operatively coupled to one of said first transceiver means and] a one of said plurality of on-

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board weighing devices for receiving said signals from said one of said plurality of on-board weighing devices [pressure sensor assembly,] and processing said signals [and transmitting data signals] to provide data indicative of the truck's hauling status; [by way of said transceiver; and]

a plurality of first transceiver means each mounted to one of said plurality of trucks for receiving said hauling status data from said one of said plurality of processor means and transmitting said hauling status data in association with additional data that identifies said one of said plurality of trucks; and

a [stationary processor means] remote processing center including second transceiver means for [communicating with] receiving said hauling status and truck identifiying data from said one of said plurality of first transceiver means, said remote processing center generating a historical data base, containing said data indicative of the truck's hauling status and indexed by said identifying data [stationary processor means receiving said data signals from each of said plurality of processor means mounted to said plurality of trucks, said data signals identifying the truck and its hauling status].

46. (Once Amended) A system as set forth in claim 44 wherein

said remote processing center [stationary processor means] includes 1) first means for calculating in response to at least said data base [signals] an average load time for each loader, 2) second means responsive to at least said data base and said first means for calculating the current load delay time for each loader, 3) third means responsive to said second means for identifying the loader with the minimum load delay time, 4) fourth means responsive to said third means for forming control data for

transmission by said second transceiver means, said control data identifying a particular truck and the loader with the minimum load delay time; and

each of said plurality of processor means mounted to said plurality of trucks includes fifth means responsive to said control data received [from said fourth means] by said first transceiver for displaying the number of the loader identified by [the] said control data to the operator of the one of said plurality of trucks identified by [the] said control data.

50 ~~48~~. (Once Amended) A system as set forth in claim ~~44~~ 46 wherein said [stationary processor means includes] data base comprises a memory means responsive to said remote processing center for archiving said hauling status and identifying data transmitted from said plurality of trucks.

Sub D9

49. (Once Amended) A system as set forth in claim 44 wherein said processor means generates hauling status data [signals] for transmission in response to said signals from said pressure sensor assembly which are indicative of whether a particular truck is dumping its load, beginning loading of a new load or in transit between load and dump sites.

52 ~~50~~. (Once Amended) A system as set forth in claim ~~44~~ 46 wherein said [stationary processor means] remote processing center includes memory means for archiving said hauling status and identifying data [signals] from each of said plurality of processors in groups such that said data base is firstly identifiable with individual ones of said plurality of trucks and secondly identifiable with types of trucks comprising said plurality of trucks.

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53 ~~51~~. (Once Amended) A system as set forth in claim ~~50~~ 52 [47] wherein said remote processing center is responsive to the said data base formed by [the] said hauling status and identifying data archived in said memory means [is used by said stationary processor means] to generate control data for controlling the movement of said plurality of trucks by causing said second transceiver to transmit [transmitting] said control data to [for reception by] said plurality of first transceivers.

C8

Sub D10

52. (Once Amended) A method for detecting and recording the degree of road roughness for a [an off-road, heavy-duty] truck having a body supported on a frame, said method comprising the steps of:

periodically calculating the force of said truck body on said truck frame;

storing said force calculations;

periodically comparing a selected one of said force calculations with other stored force to determine if said one of said force calculations is a force spike;

counting the force spikes; and

deriving from the total count of force spikes an indication of the degree of road roughness and displaying said indication.

C9

55. (Once Amended) A system for measuring the degree of tire use by a vehicle which hauls material in a dump body pivotally mounted to the frame of said vehicle, said apparatus comprising;

distance means for measuring the distance traveled by said vehicle and providing distance data;

an on-board weighing device for measuring the total weight of a load of material hauled by said vehicle and providing weight data and for providing data indicative of the beginning and ending of a haul cycle;

storage means responsive to said distance means and said on-board weighing device for accumulating the distance and weight data; and

stationary processor means for receiving said weight and distance data, said stationary processor means including 1) means for time marking at least a portion of said distance and weight data so as to identify[ing] the elapsed time of each haul cycle, 2) means for determining the total distance and the weight of material for each haul cycle, 3[2]) means for multiplying the total distance and weight for each haul cycle to provide a sum, 4[3]) means for dividing said sum by [the] said elapsed time for each haul cycle, and 5[4]) means for displaying the value resulting from the multiplying means [thereby indicating a standard for the degree of tire wear of the truck tires as a function of the vehicle's load].

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58. (Once Amended) An apparatus for use in connection with an off-road, heavy-duty truck wherein said apparatus records vital statistics of the truck in connection with an identifier [number] entered into the apparatus by the truck operator, said apparatus comprising:

a processor including memory means;

means coupled to said processor for entering an identifier [number] and [in response thereto identifying] associating a portion of said memory means with said identifier;

measuring means for providing [data] signals indicative of the hauling [parameters] status of said truck to said processor means;

said processor means responsive to said measuring means for 1) receiving said signals [data indicative of hauling parameters], 2) providing data indicative of truck performance in response to said signals [manipulating said data] and 3) routing said manipulated data to locations within said portion of said memory [identified by said entering] means;

detecting means responsive to said entering means for detecting changes in [the] said identifier [number]; and

means responsive to said detecting means for transferring from said memory means the [manipulated] data in said portion of memory when a change of the identifier [number] has occurred.

60. (Once Amended) [An apparatus]A system for identifying an overload condition in an off-road, heavy-duty truck[s] having a body [bodies] mounted to [the] a truck frame[s] by a hinge [assemblies] assembly for movement between lowered and raised positions, said apparatus comprising, in combination:

a sensor assembly mounted on said truck frame and supporting a predetermined portion of the weight of said truck body on said truck frame when said truck body is in said lowered position, said sensor assembly responding to the weight of said body to provide a signal indicative of the entire weight of said body;

a means for transferring said signal to a remote, off-board processor;

said remote off-board processor means responsive to said signal and including memory means for storing a predetermined maximum load capacity for said truck body; and

said processor means including means for 1) determining a weight of said truck body from the signal of said sensor assembly indicative of the weight of the load, 2) comparing the weight with the predetermined maximum load capacity, and 3) generating an output signal if the weight is greater than the predetermined maximum load capacity.

61. (Once Amended) [An apparatus]A system as set forth in claim 60 including means for displaying the weight of said truck body.

62. (Once Amended) [An apparatus]A system as set forth in claim 60 including means in said processor means for accumulating the total number of times an output signal is generated indicating an overload of the truck.

63. (Once Amended) An apparatus for measuring and manipulating various hauling and loading parameters for an off-road, heavy duty truck having a body, a frame and front and rear axles, said apparatus comprising:

a first weighing device on said truck for measuring a first force of said truck body on said truck frame and providing data representative of said first force;

a second weighing device on said truck for measuring a second force of said truck body on said truck frame and providing data indicative of said second force;

a processor means responsive to said first and second weighing devices for determining the fraction [distribution] of the total weight of said truck body over the front axle and the fraction of the total weight of said truck body over the [and] rear axle[s] of said truck; and

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display means responsive to said processor means for displaying the [portions of the] weights [of said truck body carried] supported by said front and rear axles.

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~~65~~. (Once Amended) An apparatus as set forth in claim 66 ~~64~~ wherein hydraulic cylinders connected between said truck frame and body move said truck body between said raised and lowered positions, said second weighing device sensing [the] a pressure [in the] of hydraulic fluid filling [of] said hydraulic cylinder.

C12

75. (Once Amended) In a system for controlling the routing of a fleet of vehicles composed of distinct groups to a plurality of possible locations, a method for monitoring and commanding vehicle movement comprising the steps of:

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sensing the weight and change in weight of the load carried by each vehicle and formulating [raw] data representative of said weight and said change in weight;

transferring said [raw] data to a central location;

cataloging said [raw] data at said central location from each vehicle; [and combining said raw data from selected vehicle groups to provide collective data indicative of group performance; and]

selecting one of said distinct groups of vehicles;

combining said data from said one of said distinct groups of vehicles to provide collective data indicative of group performance; and

analyzing said [raw and collective] cataloged and collective data to provide [data] commands for transfer to selected vehicles.

76. (Once Amended) In a system for controlling the routing of a fleet of load-carrying vehicles composed of distinct groups to a plurality of possible locations, an apparatus for monitoring and commanding vehicle movement comprising, in combination:

first means on-board each [of said] vehicle[s] in said fleet of vehicles for sensing a change in load carried by said vehicle and forming data representative of said change;

second means on-board [each of] said vehicle[s] for transmitting said data;

a central computer for receiving said data from each [of said] vehicle[s] in said fleet of vehicles and (1) cataloging said data to provide averages for said each vehicle, (2) formulating from said averages a data base for each of said distinct groups [from said averages], (3) analyzing said averages from said each [of said] vehicle[s] and said each [of said] distinct group[s] and (4) forming control data in response to said analysis that includes data identifying at least one vehicle in said fleet of vehicles; and

transmitting means coupled to said central computer for transmitting said control data to said identified vehicle [selected trucks].

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79. (Once Amended) In a system as set forth in claim 76 wherein each of said vehicles is loaded with material by a loader and said data from said second on-board means provides [data indicative] of an indication of the operation of said loader; [performance such that said central computer includes a data base of loader performance based on said data]

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said central computer including means responsive to said data for providing a quantitative indication of loader efficiency.

80. (Once Amended) In a system as set forth in claim 76 wherein said vehicles include a pivotal body mounted on a frame for movement between raised and lowered positions and said first on-board means includes a pressure sensor assembly mounted to said frame for supporting the entire weight of said body in its lowered position [and providing said data indicative of a change in load].

81. (Once Amended) In a system as set forth in claim 76 wherein said on-board means includes means for detecting an [a monotonic] increase in the load carried by said vehicle.

82. (Once Amended) In a system as set forth in claim 80 wherein an interface is formed where said pivotal body meets said frame, said pressure sensor assembly is mounted on said [the] frame [of said vehicle and is] such that said pressure sensor assembly extends continuously along [the] said interface [between said truck body and truck frame] when said body is moved to its lowered position.

83. (Once Amended) In a system for controlling the routing of a fleet of [dump-body] trucks composed of distinct groups to a plurality of possible locations and including a central computer for receiving data from said trucks and issuing commands to said trucks, , said trucks having a dump body pivotally mounted to a frame, an apparatus on-board each of said trucks comprising, in combination:

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a pressure sensor assembly mounted to each truck in said fleet of [the frame of said] trucks for [supporting the entire weight of the body of said truck in its lowered position, said pressure sensor assembly] providing pressure data indicative of the weight of said dump body;

a processor means on-board each of said trucks for receiving said pressure data and detecting a [monotonic] change in the weight of said body, and providing output data indicative of truck condition; and

transmitter means on-board each of said trucks for receiving said output data from said processor means and transmitting said output data to said central computer for further processing.

C15

89. (Once Amended) An apparatus as set forth in claim 88 wherein said processor means includes means for detecting a [monotonic] change in the weight of said truck body and formulating data indicative of truck condition in response to said pressure data and its monotonic change.

C16

91. (Once Amended) An apparatus as set forth in claim 90 wherein said means includes means for subtracting a predetermined weight representative of the tare weight of said body from said single indication of the weight of said truck body and its load [in order to provide an indication to said display of the net weight of said truck body].

C17

95. (Once Amended) A system for measuring the weight of a vehicle body and its load and transferring the weight measurement to a remote stationary site, said system comprising, in combination:

a vehicle frame for supporting said body;

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a pressure sensor assembly mounted on said [truck] vehicle frame and positioned along an interface between said [truck] vehicle body and frame for supporting a predetermined portion of the total weight of said [truck] vehicle body such that said assembly distributes said predetermined portion of the total weight of said [truck] vehicle body in a substantially uniform manner along said interface, said assembly providing at least one output signal indicative of the pressure at said interface between said body and frame;

means remote from said vehicle for receiving at least one output signal and formulating an indication of the weight of said body and its load; and

coupling means joining said pressure sensor assembly and said remote means for transferring said at least one output signal from said assembly to said remote site.

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99. (Once Amended) In a system utilizing pressurized tubing, an apparatus for terminating an end of said tubing and for insuring the termination is leak-proof under high pressures, said apparatus comprising, in combination:

an end clamp located at the end of said tubing and comprising first, second and third [positions] portions;

said third [position] portion of said end clamp located inside said tubing while said first and second portions fit over the outside of said tubing and oppose one another so as to sandwich said tubing and third position between said first and second portions;

means for joining said first, second and third [positions] portions of said clamp with said tubing [including a plurality of screws holding said portions together and also bonding material joining the tubing to

said portions] so as to totally seal the end of said tubing; and

a collar surrounding said tubing at an area proximate the end of said tubing but rearward of said end clamp, said collar having a central bore for receiving said tubing and restraining said tubing from changing its cross-sectional shape in the area of the tube under and adjacent to said collar [such that the radial forces with respect to the longitudinal axis of said tubing are at least partially absorbed by said collar and thereby attenuated at the longitudinal interface between said tubing and said clamp].

100. (Once Amended) In a system for monitoring hauling parameters of a vehicle with a dump body that pivots between raised and lowered pivotal positions, an on-board apparatus comprising, in combination:

a sensor mounted on said body and responsive to the pivotal position of said body for providing an output signal indicative of the position of said body, said sensor being totally encapsulated in a housing in order to prevent ambient conditions from reducing the responsiveness of said sensor;

a processor for receiving said output signal from said sensor and responding to said signals in a predetermined manner; and

means communicating said output signal from said sensor to said processor wherein said means includes an output port in said housing which maintains the sensor in isolation from its ambient environment.

102. (Once Amended) In a system for controlling the routing of a fleet of material-hauling vehicles to a plurality of possible load or dump locations, an apparatus

for monitoring and commanding vehicle movement comprising, in combination:

means on-board each of said vehicles for sensing the beginning of the loading of material into said vehicle and the dumping of said material from said vehicle and, in response to said sensing, forming data indicative of loading or dumping;

transceiver means on-board each of said vehicles for transmitting said data;

a central computer having a transceiver for receiving said transmittal data from each of said vehicles and having a processor and a memory for formulating a data base from which control data is derived, said central computer transmitting said control data to said vehicles for instructing the operator of each vehicle <u>of a particular one of said plurality of possible</u> [as to the proper] load or dump destination<u>s</u>; and

said on-board transceiver means on each of said vehicles receiving said control data and said on-board sensing means responding to said control data to indicate to the vehicle operator <u>said particular one of said plurality of possible load or dump</u> [the proper vehicle] destination<u>s</u>.

REMARKS

Applicant has carefully considered the Office Action and the claims have been amended to overcome the Section 112 rejections of paragraphs 20 and 21. For the reasons set forth below, the claims have not been amended to overcome the prior art rejections contained in paragraphs 22, 23, 24, 25, 26 and 27. Claims 66-68 and 70-72 have been cancelled.

As a general remark concerning all of the rejections based on prior art, applicant believes express limitations